

The Commission should further clarify its statement in Paragraph 32 with regard to two points. First, the Commission should clarify that the requirement to operate compatibly with other CDMA systems is intended to apply only to the systems licensed within the current processing group. While LQP believes that full-band interference sharing will enable multiple CDMA systems to operate in 11.35 MHz of the uplink spectrum and 16.5 MHz of the downlink, the Commission must restrict use of these bands to the applicants whose applications are now pending. The 1610-1626.5 MHz and 2483.5-2500 MHz bands provide a bare minimum of spectrum for first generation LEO MSS systems, regardless of whether as few as two systems or as many as five systems are deployed. To require coordination with a new applicant now or several years hence would simply place procedural burdens on licensees when there is likely to be no available spectrum until all licensees assigned to one segment have failed to meet their milestones.

Second, the Commission should place the burden of achieving coordination on newly launched, rather than in-orbit, systems. Although coordination should proceed before deployment, the burden of achieving operational compatibility must ultimately be on in-orbit systems to proceed with their previously coordinated operations. Placing the burden on newly-launched systems will ensure that all CDMA applicants in the current processing round are on notice that the coordination process must proceed without delay. To put the primary burden on systems which are placed in

service first could create an incentive for other system applicants or licensees to delay the coordination process. As this approach would delay the implementation of service, it would not be in the public interest.

Recognizing the need for coordination, the Commission must also adopt procedures which will successfully permit the various systems to coordinate. See text infra at § V. The Commission should, for example, require CDMA licensees to adhere to the parameters for CDMA sharing put forward by the CDMA proponents during the NRC as stated in the Final Report of the Majority of Active Participants of Informal Working Group 1. All parties interested in the use of CDMA developed sharing criteria for that report. Given that all CDMA applicants, and a potential applicant, reached consensus on these issues, the Commission should require licensees to follow these guidelines for CDMA coordination procedures. Similarly, the Commission should ensure that CDMA-TDMA coordination proceeds fairly so that users of neither segment are advantaged or disadvantaged.

LQP supports the Commission's intention to require coordination among domestic MSS systems. But this intention should be made explicit, and procedures adopted for effectuation of coordination, as discussed more fully in Section V.

IV. ADOPTION OF A PROPERLY CRAFTED CDMA/TDMA SPECTRUM-SHARING PROPOSAL TO AWARD MSS ABOVE 1 GHZ LICENSES IS PREFERABLE TO COMPARATIVE HEARINGS, AUCTIONS OR LOTTERIES.

Adoption of a properly crafted spectrum sharing proposal (as discussed in the previous section) would allow MSS licenses to be granted expeditiously and MSS licensees to develop spacecraft designs which best fit their business plans. As mandated by the Omnibus Budget Reconciliation Act of 1993, the Commission has come close to and can complete a final engineering solution for award of MSS licenses (as well as threshold qualifications) which would avoid mutual exclusivity among MSS Above 1 GHz applicants. See Omnibus Budget Reconciliation Act of 1993, Pub. L. 103-66, § 6002 (Aug. 10, 1993) (codified at 47 U.S.C. § 309(j)(6)(E)).<sup>31</sup> Moreover, the public interest would be served by such a solution, and not by use of comparative hearings, auctions or lotteries.

A. The Proposed Spectrum Sharing Solution Achieves Critical Principles for Spectrum Sharing.

Despite multiple and continued attempts by the applicants, the Negotiated Rulemaking Committee, and the Commission staff, resolution of the spectrum sharing issues for MSS Above 1 GHz has proved elusive. Prior proposals for resolution have been

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<sup>31</sup> With respect to Section 309(j)(6)(E), the House Report states: "The ongoing MSS (or "Big LEO") proceeding is a case in point. The FCC has and currently uses certain tools to avoid mutually exclusive licensing situations, such as spectrum sharing arrangements and the creation of specific threshold qualifications, including service criteria." H.R. Rep. No. 103-111, 103d Cong., 1st Sess., at 258-59 (1993), reprinted in 1993 U.S.C.C.A.N. 378, 585-86.

premised on certain underlying principles, and many of these principles are embodied in the plan proposed by the Commission in the NPRM.

First and most importantly, a spectrum sharing plan must allow the Commission "to proceed expeditiously with licensing." NPRM, ¶ 30. The MSS Above 1 GHz applications have been pending for three years; additional time will be required for implementation of the systems. GLOBALSTAR has completed initial financing and is prepared to begin acquisition of long-lead items needed to construct its system.<sup>32</sup> Commission action can expedite the time in which service will be available to the public. No further delay should be tolerated in bringing to the public the important new telecommunications services to be provided by MSS LEO systems. See NPRM, ¶¶ 2-4.

Second, a spectrum sharing plan should generally "leave spacecraft design decisions to the space station licensees." NPRM, ¶ 11. As the Commission points out, "licensees are in a better position to determine how to tailor their systems to meet the particular needs of their customer base." Id. (footnote omitted). Providing the opportunity for innovation in system design allows the marketplace to select between designs and promotes research and development to improve system performance.

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<sup>32</sup> See IQP Request for Waiver of Section 319(d) (Mar. 30, 1994).

Third, as LQP has emphasized throughout these proceedings,<sup>33</sup>

a spectrum sharing plan is needed to ensure the benefits of multiple entry and competition. Multiple entry benefits consumers by encouraging operators to provide service at lower costs, to develop more efficient means of delivering service, and to maximize the variety and geographic scope of their services. See, e.g., Radiodetermination Satellite Service, 60 RR 2d 298, 301 (1986); Competitive Common Carrier, 85 FCC 2d 1, 2 (1980). Multiple entry has been an underlying premise of the Commission's satellite service rules and policies since the beginning of its involvement with communications satellite technology. The Commission has consistently favored a policy of encouraging multiple entry over other alternatives, such as comparative hearings or a single provider. See, e.g., Domestic Communications Satellite Facilities, 35 FCC 2d 844, ¶ 8 (1972), modified, 38 FCC 2d 665 (1972); Radiodetermination Satellite Service, 58 RR 2d 1416, ¶ 5 (1985); International Satellite Systems, 101 FCC 2d 1046, 1086 ¶ 86 (1985). A spectrum sharing solution for MSS Above 1 GHz best supports achievement of multiple entry.

Fourth, the Commission's basic spectrum-sharing approach promotes use of the entire spectrum allocated for MSS. NPRM, ¶ 35. Given the limited bandwidth available for MSS, it is

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<sup>33</sup> See, e.g., LOSS Petition for Rule Making (filed Nov. 4, 1991); Consolidated Reply Comments (filed Mar. 27, 1992).

essential that none of the spectrum be warehoused either during the licensing process or as systems become operational.

Fifth, a spectrum-sharing proposal for MSS Above 1 GHz by definition can achieve the important objective of "accommodate[ing] all qualified applicants" and avoiding mutual exclusivity. NPRM, ¶¶ 29, 38. The spectrum sharing plan proposed in the NPRM (modified as discussed in Section III) and threshold qualification requirements for MSS Above 1 GHz would allow the Commission to avoid mutual exclusivity as suggested in the Budget Act. See 47 U.S.C. § 309(j)(6)(E).

Having itself proposed a spectrum sharing plan to accommodate all LEO systems, the Commission asked applicants not satisfied with its plan to "propose a plan that accommodates the reasonable requirements of all qualified applicants." Id. LQP appreciates the Commission's effort to accommodate the perceived requirements of all applicants. However, the goals discussed above, including expediting the MSS licensing process, achieving multiple entry, and avoiding the substantial costs of spectrum auctions, should not be sacrificed in favor of restarting the three-year-long negotiations which have led to development of the Commission's plan.

Any spectrum sharing plan requires compromise, and the Commission has proposed a plan which represents a reasonable accommodation of competing interests and offers substantial public interest benefits. The flaws in the plan discussed in Section III can and should be remedied. Accordingly, LQP

believes remedying these defects and finalizing the Commission's proposal would best serve the public interest and most expeditiously allow MSS LEO applicants to proceed with construction, launch and operation of proposed MSS systems.

B. Use of Comparative Hearings Would Delay Rather Than Expedite Licensing Contrary to the Public Interest.

LQP agrees with the Commission's assessment of the inadvisability of holding comparative hearings for MSS Above 1 GHz. NPRM, ¶ 40. A comparative hearing among the five LEO applicants would be prolonged and would certainly "delay the provision of needed service to the United States." Id.; Domestic Fixed-Satellite Service, 930 F.2d 832, 842-43) (with respect to comparative hearings, any "possible benefit would be more than offset by the harm to the public interest that would result from incurring substantial delays in the commencement of any additional satellite service").

Moreover, as the Commission recognized, it has not developed policies or criteria to select among competing satellite technologies. See MSS Tentative Decision, 6 FCC Rcd 4900, 4904, ¶ 19 (1991) ("the unique characteristics of the satellite service render it infeasible to select satellite licenses through comparative hearings"). Thus, the Commission, applicants, and the public have no assurance that a comparative hearing would serve the purpose of selecting a "superior" applicant to provide service. See id. at 833, ¶ 20 (rapid development in satellite

technology would make obsolete any policies developed in comparative hearings with regard to pending system proposals).

The one certain result of comparative hearings would be delay in licensing. Delay not only prevents delivery of service to the United States public, it also impairs the ability of the United States to initiate and complete coordination procedures for the proposed systems. NPRM, ¶ 40. Delay would destroy many of the benefits the Commission has identified with MSS service. See MSS Allocation Order, 9 FCC Rcd at 536 at ¶ 1. LQP therefore agrees that delay outweighs any purported or potential advantages of comparative hearings for MSS.

C. Spectrum Auctions Would Not Serve the Public Interest.

As LQP noted in comments in PP Docket No. 93-253, there are sound reasons to avoid auctions for MSS spectrum.<sup>34</sup> These reasons are discussed briefly below.

1. Budget Act Considerations. LQP believes that the Commission's tentative conclusion in the NPRM that MSS spectrum auctions would further the public interest objectives of the new Section 309(j) of the Communications Act is not correct. See NPRM, ¶ 43; 47 U.S.C. § 309(j)(3). First, attempting to establish rules for auction of MSS spectrum and then conducting such an auction would result in delays in provision of service to the public which would not occur if the Commission adopted a

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<sup>34</sup> See LOSS Comments (filed Nov. 10, 1993); Reply Comments (filed Nov. 30, 1993).



spectrum sharing proposal accommodating all eligible applicants. Thus, auctions would not advance the statutory goal of "the development and rapid deployment of new technologies, products and services for the benefit of the public." 47 U.S.C. § 309(j)(3)(A).

Second, the Commission would not promote "economic opportunity and competition" through MSS auctions. Id. § 309(j)(3)(B). Unlike spectrum allocated for the Commission's new "Personal Communications Service," there is only one block of frequencies allocated for MSS. Awarding licenses in this service by competitive bidding, a preclusive format, would impair economic opportunity and thereby deter multiple entry and competition.

While an auction might recover a portion of the "value of public spectrum" in the United States, 47 U.S.C. § 309(j)(3)(C), the public could also suffer increased costs for MSS service as a result of other countries holding similar procedures for award of MSS spectrum. See NPRM, ¶ 44. Moreover, the most "efficient and intensive use," 47 U.S.C. § 309(j)(3)(D), of the MSS spectrum is through multiple entry. Competitive bidding would require the Commission to reject its long-standing commitment to competitive entry in the satellite services,<sup>35</sup> and so reduce rather than promote efficient and intensive use of these frequencies.

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<sup>35</sup> See, e.g., International Satellite Systems, 101 FCC 2d 1046, 1086 ¶ 86 (1985); Radiodetermination Satellite Service, 58 RR 2d 1416, 1418 ¶ 5 (1985).

2. International Considerations. The Commission itself recognizes that an MSS auction may have the "unintended consequence" of imposing considerable costs on LEO satellite systems as a result of other administrations following the lead of the United States. NPRM, ¶ 44. LEO satellite systems provide inherently international services, and are dependent upon receiving authorization from other administrations to provide global service.

While the MSS bands are allocated internationally for MSS and RDSS services,<sup>36</sup> each nation may conduct its own allocation and licensing proceedings. Spectrum auctions for domestic licenses could trigger use of auctions for MSS/RDSS licenses in foreign countries, or suggest "licensing fees" based on the "value" of the spectrum established in the United States. As then Chairman Quello warned Congress prior to enactment of the Act:

[R]equiring use of competitive bidding for low earth orbiting satellite system licenses in this country might subject those licensees to exorbitant payment requirements for access to spectrum in other countries. I am particularly concerned that some foreign governments opposed to the use of our international telecommunications accounting and auditing standards could use our competitive bidding requirement as a justification for retaliatory measures.

Letter from Chairman James H. Quello, at 2 (June 23, 1993). The imposition of spectrum costs in multiple countries "may

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<sup>36</sup> See Addendum & Corrigendum to the Final Acts of the World Administrative Radio Conference, Malaga-Torremolinos (1992).

effectively preclude a U.S.-owned system from serving other countries." NPRM, ¶ 44.

3. Public Interest Considerations. Avoiding mutual exclusivity by use of a negotiated or engineering solution is endorsed in the legislative history of the Budget Act as preferable to an auction (or lottery) for the MSS Above 1 GHz frequencies. The Budget Act emphasizes that its grant of authority to assign licenses by competitive bidding does not relieve the Commission of its public interest obligation to seek to avoid mutual exclusivity in licensing proceedings.<sup>37</sup> 47  
U.S.C. § 309(j) (6) (E).

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<sup>37</sup> New Section 309(j) (6) (E) of the Act states: "Nothing in this subsection, or in the use of competitive bidding, shall ... be construed to relieve the Commission of the obligation in the public interest to continue to use engineering solutions, negotiation, threshold qualifications, service regulations, and other means in order to avoid mutual exclusivity in application and licensing proceedings."

Both the House<sup>38</sup> and Chairman Dingell<sup>39</sup> have underscored the applicability of this provision to the Big LEO proceeding. Congress has thus indicated that competitive bidding should not be used for assignment of MSS licenses in this proceeding if a method to avoid mutual exclusivity is available to the Commission. Such a method, sharing, is now available.

4. Feederlinks. The Commission has already correctly concluded in PP Docket No. 93-253 that "intermediate links, including MSS feederlinks, . . . will not be subject to competitive bidding." Second Report and Order, FCC 94-61, at ¶ 43 (released Apr. 20, 1994). As LQP has contended previously, use of auctions with respect to feederlinks was not within the scope of the auction authority conveyed by the statute.<sup>40</sup>

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<sup>38</sup> With reference to Section 309(j)(6)(E), the House Report indicated: "The ongoing MSS (or "Big LEO") proceeding is a case in point. The FCC has and currently uses certain tools to avoid mutually exclusive licensing situations, such as spectrum sharing arrangements and the creation of specific threshold qualifications, including service criteria." H.R. Rep. No. 103-111, 103d Cong., 1st Sess., at 258-59 (1993), reprinted in 1993 U.S.C.C.A.N. 378, 585-86.

<sup>39</sup> Chairman Dingell stated, with reference to Section 309(j)(6)(E), that "Congress clearly had the Big LEO proceeding in mind when it added this language to the bill because it believed that mutual exclusivity could be avoided in that proceeding." Letter to Chairman James H. Quello, at 3 (Nov. 16, 1993). Rep. Dingell further stated that "the Commission has an obligation to attempt to avoid mutual exclusivity among qualified applicants in the Big LEO proceeding" in light of the language of the Act and its legislative history. Id.

<sup>40</sup> See LOSS Reply Comments, 8 (filed Nov. 30, 1993) (citing letter from Congressman Dingell noting that spectrum subject to auction must be used to receive or transmit "directly" subscriber communications).

Auctions cannot, therefore, be used with respect to MSS feederlinks.

5. Auction Format. Putting aside the legal flaws in selecting licensees by auction, the Commission's specific proposal to auction spectrum in "paired" 2.05 MHz blocks is both technically unsound and administratively unworkable.

The Commission arrived at the 2.065 MHz figure by arbitrarily dividing the available spectrum (16.5 MHz) in each band into eight equal blocks. These blocks bear no relationship whatsoever to the technical needs of any of the proposed MSS systems. A block of this size in and of itself is simply unworkable.

The "paired block" concept is based on the Commission's premise that "as little as 2 to 4 MHz may provide an individual system with the same capacity as it would have operating on a shared basis over 11.5 MHz." NPRM, ¶ 45. This premise is flatly incorrect with regard to the S-band spectrum. As explained in detail in the Technical Appendix, each CDMA system requires all of that spectrum (although it can be shared), and cannot be confined into such a small downlink band.

The concept also is unworkable with regarding to the L-band portion of the MSS spectrum, because the minimum channelization proposed by any applicant is 1.25 MHz. If blocks are adopted for the L-band, they should be based on this as a minimum amount of spectrum to be awarded, and applicants should be permitted to bid on as many such blocks as their systems require.

The "paired spectrum" approach is also unworkable because it would force Motorola to acquire blocks in the S-band which its system does not need. Either that spectrum would lie fallow, or the Commission would have to devise some mechanism to re-auction that spectrum, adding delay and uncertainty to the process.

With regard to both TDMA and CDMA systems, any auction approach which involves bidding on discrete segments will lead to certain applicants receiving unuseable, disjointed blocks of spectrum. This could create a "secondary market" in frequencies which will immensely complicate and delay the commencement of service to the public, undermining the goal of auctions.

At root, the auction concept was simply not intended for the licensing of unique satellite systems involving complex frequency coordination and sharing. The Commission may believe that designing an auction would be simple, but it is, to the contrary, simply unacceptable.

D. Use of Lotteries for MSS Above 1 GHz Would Be Contrary to Congressional Directive, Prior Commission Actions, and the Public Interest.

The NPRM (at ¶ 46) tentatively concludes that the Commission may use a lottery to award MSS Above 1 GHz Spectrum. LQP submits that this conclusion is incorrect and that a lottery should not be employed.

1. A Lottery Would Violate the Intent of Congress.

In authorizing the Commission to select among competing applicants by lottery, Congress listed five criteria for the

Commission to consider in determining whether a lottery would serve the public interest:

[1] whether there is a large number of licenses available in the particular service under consideration; [2] whether there is a large number of mutually exclusive applications for each license, for example, when a new service is initiated; [3] whether there is significant back-log of applications; [4] whether employing a lottery would significantly speed up the process of getting service to the public; and [5] whether selection of the licensee will significantly improve the level [of] diversity of information available in the community versus the use of the traditional comparative hearing process. The Commission, in making this public interest assessment when deciding whether to utilize a lottery in a particular instance, should consider all of these factors.

H.R. Conf. Rep. No. 765, 97th Cong., 2d Sess., at 37 (1982), reprinted in 1982 U.S.C.C.A.N. 2237, 2281.

These criteria are not met here. (The NPRM does not even address them at all.) First, depending upon the technical specifications ultimately adopted, there may be at most five licenses available for MSS Above 1 GHz. Second, there are at most six applicants vying for the license or licenses, far fewer than in services where lotteries have been employed. Third, because this is the only group of applications eligible for processing at this time, there is no back-log in processing applications. Fourth, it is unlikely that choosing an applicant by random selection would speed service to the public. As the Commission has learned in using lotteries in other services, the award of a license pursuant to lottery itself frequently spawns lengthy litigation which deprives the public of service. Moreover, the Commission now has the authority to conduct

auctions as an alternative mechanism, which offer a no less prompt selection among applicants. Fifth, the final criterion does not even apply to satellite services. Thus, none of the elements that Congress enumerated to make the requisite public interest finding is present here.

2. A Lottery for MSS Would Be Contrary to Prior Commission Actions and the Public Interest. In 1987, the Commission considered the use of lotteries to select a domestic MSS license.<sup>41</sup> At that time, the Commission concluded that random selection was inappropriate, and also suggested that the use of a lottery could result in a delay in the implementation of service:

The determination of qualifications [after selection of a tentative licensee] could significantly delay the award of a license and, consequently, service to the public. If the authorization were awarded to an unqualified entity, the entire process would need to be repeated. Thus, lotteries do not appear to be an acceptable processing alternative.

MSS Report and Order, 2 FCC Rcd at 487.

In contrast, in every instance where the Commission has adopted the lottery system, its decision was based on application of the criteria set forth by Congress.<sup>42</sup>

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<sup>41</sup> See MSS Report and Order, 2 FCC Rcd 485 (1987) (subsequent history omitted).

<sup>42</sup> See, e.g., Amendment of the Commission's Rules to Allow the Selection from Among Mutually Exclusive Competing Cellular Applications Using Random Selection or Lotteries Instead of Comparative Hearings, 98 F.C.C.2d 175, 180-82 (1984).



The NPRM supplies no explanation for departing from this consistent precedent, and there would in fact be no justification for doing so. Lotteries have never been used to select satellite licenses, even in cases where there was more homogeneity among the applicants than is the case here. Random selection, which works well with services that are offered on an indiscriminate basis to the public at large, simply will not work in the MSS Above 1 GHz service where there are technically distinct, non-fungible proposals.<sup>43</sup>

Finally, unlike other services involving "cookie-cutter" applications, where lotteries have been used, each MSS applicant has made huge investments in research and development that would be compromised if a licensee is chosen by such an arbitrary mechanism. It would be unfair to the existing applicants, as well as contrary to sound policy, to choose a "winner" based on mere chance.

3. Lotteries of MSS Are Unjustifiable. Over the past three years, the applicants and the Commission have invested enormous amounts of time and resources in developing and evaluating various proposals for licensing MSS Above 1 GHz satellite systems. Throughout the NPRM, the Commission recognizes the critical importance of MSS systems to the United

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<sup>43</sup> The NPRM refers to the order adopting lotteries for the Nationwide Paging Service (NPRM, ¶ 46 n. 84). But, as the reference reveals, that service involved a far larger number of competing applicants and, unlike here, "minimal differences among applicants." Id.; see Public Mobile Services (Nationwide Paging Service), 57 RR 2d 1416 (1985).

States economy and the substantial service advantages which would be provided to the U.S. public. It has also recognized that there are substantial differences among the applicants and their capacity to provide these economic and service advantages in isolation or in a spectrum-sharing environment.

Given the investment of resources and the importance of the MSS Above 1 GHz spectrum to achieving the specified public interest benefits, there is no justification whatsoever for awarding MSS Above 1 GHz licenses by chance. Moreover, for the same reasons discussed above with respect to auctions, the proposed procedure for an MSS lottery makes no technical sense for the proposed systems.

VI. THE COMMISSION SHOULD ADOPT SPECIFIC COORDINATION REQUIREMENTS FOR THE RDSS/MSS APPLICANTS.

The Commission, in the NPRM, proposes a spectrum sharing plan which allocates a portion of the uplink spectrum and all of the downlink spectrum to be used on an interference sharing basis by licensed CDMA systems. Because system design has an impact on interference sharing, and, conversely, the need for interference sharing has an impact on system design, the Commission must require coordination among the CDMA applicants to begin

immediately.<sup>44</sup> The Commission had proposed very strict construction and system implementation milestones.

In order to finalize system design, and meet these milestones, coordination among the CDMA applicants must be completed. As developed during the NRM, CDMA systems can coordinate on the basis of a few parameters. See Report of the Majority of Active Participants in Informed Working Group I, § 5, NRC Report, Annex 1 to Attachment 1. Additional information concerning system designs and operational parameters may assist in optimization of each system for operation in a shared environment.

The Commission must take a firm stand when it issues its Report and Order in this proceeding: the CDMA applicants must commence coordination immediately. In order to enable this process to go forward, each CDMA applicant should be required to make available information to the other CDMA applicants the following service link characteristics:

Downlink PFD spectral density

EIRP Areal Spectral Density

Polarization

Frequency Plans

Code Structures and Associated Cross-correlation Properties

Antenna Beam Patterns (satellite and mobile/fixed earth terminals operating in the MSS band)

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<sup>44</sup> This waiver of Section 319(d) is sought to enable LQP to meet its construction and launch timetables and thereby expedite service to the public.

Signal Burst Structures

Overall Interference Allowance into both ground and space receivers

Power control capabilities in both links

The Commission should prescribe a time certain for exchange of this information. Then, the Commission should require the CDMA applicants to engage in coordination for the purpose of agreeing on a recommendation of maximum downlink PFD spectral density, maximum aggregate EIRP areal spectral density, frequency plans and designated polarization for each system. A time period for submitting these recommendations should be provided. In the absence of agreement, the Commission should specify that individual applicants may file recommendations to the Commission and that the Commission will issue an order with regard to these requests within a specified period of time.

Rules implementing these procedures are contained in Section 1.3 of the Technical Appendix. However, the Commission should not await adoption of formal coordination rules; rather it should immediately implement these procedures in its Report and Order.

VII. THE COMMISSION MUST REVISE THE PROPOSED RULES FOR INTERSERVICE SHARING TO FACILITATE MSS OPERATIONS.

The Commission, in its NPRM, recognizes that MSS will operate in frequency bands which are also used by other services. In addition, some services in frequencies adjacent to the 1610-1626.5 MHz and 2483.5-2500 MHz bands also must be coordinated

with MSS. LQP believes that MSS will be able to operate compatibly with other users in the bands.

Any rules for inter-service sharing must allow MSS systems to operate on a primary basis in accordance with the spectrum allocations.

A. The Commission Should Make Minor Modifications To Its Proposed Protection Zone Requirements for Radioastronomy Operations.

LQP supports adoption of proposed Rules 25.213(a) (1) - (3) for protection of radioastronomy operations in the 1610.6-1613.8 MHz and 4990-5000 MHz bands by MSS operations with minor modifications. These provisions were debated extensively by the MSS and radioastronomy communities during the NRC.

Protection zone requirements are a workable solution to protecting radioastronomy operations. MSS LEO systems will have the ability to determine the position of a mobile earth station (MES) after its initial transmission, and, therefore, can shift the uplink frequency in use to avoid interference. After the initial transmission, if the MES is within the protection zone, the gateway station will reassign the MES frequency to one above 1613.8 MHz. Additionally, LQP plans to work with CORF to develop smaller protection zones around RAS sites, as discussed more fully in the Technical Appendix. See Tech. App. § 2.1.

LQP also supports adoption of the out-of-band emission limits for secondary MSS downlinks in the 1610-1626.5 MHz band into the 1610.6-1613.8 MHz band and for primary MSS uplinks in

the 2483.5-2500 MHz band into the RAS 4990-5000 MHz band. See Proposed Rules 25.213(a)(2)-(3).

With respect to the protection zone rules in proposed in Section 25.213(a)(1), LQP has two additional comments. First, in order to recognize the actual operating approach for RAS protection, LQP recommends that the Commission modify its proposed Section 25.213(a)(1)(v) to read as follows:

The ESMU shall notify mobile-satellite service space station licensees authorized to operate in the 1610.6-1613.8 MHz band of periods of radio astronomy operations. The mobile-satellite system shall be capable of terminating operations in this band within the first position fix of the mobile terminal either prior to transmission or based upon its location being within the protection zone at the time of initial transmission of the mobile terminal.

Second, to avoid causing harmful interference to RAS operations from out-of-band emissions, MSS systems must have access to spectrum above 1613.8 MHz to provide sufficient frequency separation between the MES carrier frequency and the RAS band edge. If there were only one CDMA MSS operator, and it were limited to only 8.25 MHz (see NPRM, § 33), there would be only about 3 MHz between RAS and the band edge of the MES emission. As discussed in the Technical Appendix, this may not be sufficient separation to protect RAS. Accordingly, the Commission should not reduce the CDMA segment from 11.35 MHz to 8.25 MHz, if only one CDMA system becomes operational, in order to effectuate the protection zone requirements of proposed Section 25.213(a)(1).

B. The Emission Limits of Proposed Section 25.213(b)  
Should Be Limited to GPS Operations.

The Commission has proposed a rule to protect the U.S. Global Positioning System (GPS), which operates under the radionavigation-satellite (space-to-Earth) service allocation in the 1565.2-1585.6 MHz band. Proposed Section 25.213(b) adopts the out-of-band emission limits recommended by the NRC for protection of GPS operations. NRC Report, at 45.

The Committee recommended that mobile units operating with MSS systems which use any portion of the 1610-1626.5 MHz band "should limit their out-of-band emissions so as not to exceed an e.i.r.p. density of -70 dBW/MHz averaged over any 20 ms period in any portion of the 1575.42 +/- 1.023 MHz band for broadband noise emission. For any discrete spurious emissions in the same band, i.e., bandwidth less than 600 Hz, the e.i.r.p. should not exceed -80 dBW. " Id.

LQP supports adoption of an emissions limit in which the value "-70 dB(W/1 MHz)" is replaced with "-50 dB(W/MHz)." The proposed revision is a reasonable unwanted emission limit for the development of reasonably priced MES units for use with MSS systems and will adequately protect the GPS system from out-of-band emissions from such systems. The out-of-band emission value of -50 dB(W/MHz) is a reduction of 59 dB over the allowable e.i.r.p. density limit and is significantly more stringent than the Commission's existing out-of-band emission limits applicable to the Fixed-Satellite Service (47 C.F.R. § 22.106). LQP

believes that current testing will substantiate the above proposed out-of-band emission limits.

C. The Commission Should Adopt Rules Regarding GLONASS Which Promote MSS and Do Not Require Protection of GLONASS Operations in Frequencies above 1606 MHz.

LQP urges the Commission to adopt an approach to sharing between MSS and GLONASS operations which recognizes the vital public interest in promoting new MSS services while not impeding MSS operations through a requirement to protect GLONASS operations above 1606 MHz. The Commission, if it adopts LQP's proposals, will enable MSS to proceed without an interim uplink spectrum sharing plan. This would provide certainty to MSS operators as to their obligations vis a vis GLONASS, and would obviate the need to return to the Commission for future modification of either the MSS spectrum sharing plan or rules concerning MSS/GLONASS sharing. In addition, LQP's proposal will provide the strongest incentive for Russia to revise its GLONASS frequency plan, aiding U.S. government efforts to achieve this objective.

LQP strongly urges the Commission to re-evaluate its proposed rules regarding sharing between MSS and GLONASS. These rules, contained in proposed Sections 25.143(b)(2)(iv) and 25.213(c)(1), do not propose inter-service "sharing;" rather, the proposed rules require MSS systems to protect GLONASS system users far beyond the uplink e.i.r.p. density limits adopted at WARC-92 and in a manner inconsistent with the operations of MSS



and GLONASS in the 1610-1626.5 MHz band on a co-primary basis as allocated.

Moreover, the proposed protection of GLONASS users above 1606 MHz is inconsistent with U.S. policies concerning radioastronomy and the promotion of MSS. The proposed protection is not required to enable the utilization of GLONASS in a Global Navigation Satellite System (GNSS), in the event the U.S. government supports and the international aviation community adopts the use of GNSS using both GPS and GLONASS.

The LQP's proposal for GLONASS starts with the recommendation of the NRC. The NRC was clear in its recommendation regarding GLONASS:

The Committee believes that the best solution to enable both MSS and GLONASS to operate compatibly without operational constraints is to effect a reconfiguration of the GLONASS frequency plan.

NRC Report, at 43. The MSS community will continue to work with the Commission and the U.S. government to implement this strategy. However, obtaining agreement of the Russian administration has proved elusive. In order to provide adequate incentive for Russia to enter into a written commitment to reconfigure the GLONASS frequency plan no later than 1998, LQP believes that the Commission must send a strong signal in its adoption of rules regarding MSS and GLONASS. These should include the following:

First, the Commission should revise footnote 731E (proposed for adoption into the U.S. Table of Allocations) to avoid the perception that aeronautical radionavigation satellite services